University of Alberta

Examining the Relationships Between Childhood Friendships, Social Behaviours and Academic Achievement in Grade One Children

by

Jordana E. Eliason

A thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Education

in

Special Education

Department of Educational Psychology

Edmonton, Alberta
Fall 2008

Library and Archives Canada

Published Heritage Branch

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque et Archives Canada

Direction du Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 978-0-494-46997-2
Our file Notre référence
ISBN: 978-0-494-46997-2

NOTICE:
The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:
L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

Abstract

Prosocial behaviours are important to children's positive social, emotional and academic development. Additionally, children's early peer relationships promote their successful academic adjustment and serve as a protective barrier against emotional distress and academic failure. This study examined the links between childhood friendships, social behaviours and literacy achievement in 221 grade one children in Western Canada. The results revealed significant correlations between prosocial behaviours, aggressive behaviours, friendships and academic achievement. Further, prosocial behaviours, friendship and relationally aggressive behaviours were found to be significant predictors of academic achievement when controlling for language of instruction and gender. Developing and evaluating tripartite models of intervention which focus on social behaviours, peer relationships and academic adjustment may have important implications for children's later social, emotional and academic success.

Acknowledgements

I would like to thank Dr. Veronica Smith for her constant support and commitment throughout my Master of Education degree. Dr. Smith has been a true mentor and friend, and her support has been invaluable to my development as a researcher and clinician. I am thankful for the opportunities that Dr. Smith has given me to expand upon my academic and research skills, and I look forward to working with her again in the future.

Table of Contents

Chapter 1: Introduction 1

Context of the Problem 1

Statement of Research Purpose 3

Chapter 2: Literature Review 4

Transactional Model of Development 4

Grade School Transition 4

Childhood Friendship 8

Friendship and Academic Achievement 10

Friendship and Social Behaviours 11

Prosocial 11

Aggressive 11

Social Behaviours and Academic Achievement 14

Friendship, Social Behaviours and Academic Achievement 15

Summary and Interpretation 16

Summary of Study Hypotheses and Questions 17

Significance of the Study 18

Chapter 3: Method 19

Sample 19

Measures 20

Demographics 20

Friendship 20

Child Social Behaviours 20

Literacy Achievement 21
Procedures 21
Chapter 4: Results 22
Preliminary Analyses 22
Associations Between Social Behaviours and Literacy Achievement 25
Predictors of Literacy Achievement 27
Chapter 5: Discussion 29
Future Research and Practice 33
Limitations 34
Conclusion 35
References 37
Appendix A: Proposed Model 46
Appendix B: Ethical Considerations 47
Appendix B1: Teacher Information and Consent Form 48
Appendix B2: Parent Information and Consent Form 50
Appendix B3: Principal Letter of Support 52
Appendix C: Study Instructions 53
Appendix D: Friendship Questionnaire 58
Appendix D1: Child Social Behaviour Scale 59

List of Tables

Table	Page
Table 1: Descriptive Statistics for Demographic Variables	23
Table 2: Means and Standard Deviations for Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables for Males and Females	24
Table 3: Means and Standard Deviations for Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables as a Function of Language of Instruction	25
Table 4: Partial Correlations Between Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables	26
Table 5: Summary of Standard Multiple Regression Analysis for Variables Predicting Word Identification Percentile Ranks	28

CHAPTER 1

Introduction

Context of the Problem

Historically, research examining the link between children's social behaviours and their developmental trajectories has focused on negative factors. Only recently have we begun to see a shift towards the prosocial effects of children's behaviour on development. Empathy, sympathy and prosocial behaviours in childhood are shown to positively relate to prosocial behaviours in adulthood (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou & Carlo, 2002) and have a considerable impact on children's learning and academic achievement (Wentzel & Caldwell, 1997). Prosocial behaviour, as reflected in cooperativeness, helpfulness, sharing and empathy, is key to promoting social contexts that facilitate academic learning (Caprara, Barbaranelli, Pastorelli, Bandura & Zimbardo, 2000). Schools, considered to be important socializing contexts, are an important site for fostering prosocial behaviours among children. Furthermore, research has demonstrated that child prosocial behaviours are better predictors of later academic achievement than early academic achievement (Caprara et al.).

Children's friendships have also shown to play a prominent role in their school adjustment. Children who establish friendships in the school environment are more likely to establish favourable perceptions of school and demonstrate greater school performance than children who do not (Ladd, 1990). Furthermore, children with reciprocated friendships display higher levels of prosocial behaviour, a higher Grade Point Average (GPA), and lower levels of emotional distress than children without reciprocated friendships (Wentzel, Barry & Caldwell, 2004). Much of the existing research on

children's friendships and school adjustment focuses on children at school entry (i.e., Kindergarten) or middle childhood, but less is known about the impact of friendship as children enter and progress through grade school. This is particularly important to understand as children undergo a significant transition into school that places higher academic and social demands on them. Children experience a social shift when entering grade school, which is reflected by increased interaction with peers, decreased time spent with adults, and the establishment of a relationship with the teacher. Further, children are faced with a new ecological setting, the task of forming new peer relationships, and being accepted into new peer networks (Ladd & Price, 1987). A convergence of research suggests that early school adjustment, as reflected in student interest, engagement, comfort level and success in the school environment, is a function of early child attributes and peer relationships (e.g., Ladd, 1996). This research highlights the importance of promoting positive peer relationships early in development.

Childhood aggression is an important indicator of an opposite trend to prosociability; that is, difficulties with social functioning and adjustment (Arsenio, Cooperman, & Lover, 2000), as well as with later peer rejection, academic failure, adolescent delinquency, unemployment, antisocial behavior and criminality (Card & Little, 2006). Additionally, aggressive behaviours in childhood are linked to problematic friendships in both boys and girls (Grotpeter & Crick, 1996). The impact of aggressive behaviours on children's social, emotional, behavioural and academic functioning emphasizes the importance of deterring aggressive developmental trajectories at early ages.

Classroom interpersonal relations, including mutual friendships and peer group acceptance, play a mediating role between children's social behaviours and their school adjustment (Ladd, Buhs & Troop, 2002). Whereas peer acceptance is referred to as how much a peer is liked or disliked by members of the peer group (Ladd et al., 2002), friendship is defined as the experience of a mutual, dyadic relationship (Bukowski & Hoza, 1989). Research demonstrates that peer acceptance promotes academic readiness and classroom involvement (Ladd, Kochenderfer & Coleman, 1997) and that peer rejection consistently leads to decreased classroom participation, loneliness, school avoidance and lower achievement (Buhs & Ladd, 2001). Although research has established the link between children's social behaviours, peer acceptance and rejection, and school adjustment, less is known about the relationship between children's social behaviours, friendship and school adjustment.

Statement of Research Purpose

The purpose of the present research is to examine the relationship between grade one children's perceived friendships, their prosocial and aggressive behaviours in the school context and their academic achievement. An understanding of these relations will contribute to the existing literature on the relationships between primary school-aged children's social behaviours, literacy academic achievement and peer relationships, and seeks to delineate the strength and nature of these relationships among grade-one children in Western Canada.

CHAPTER 2

Literature Review

The following section provides a comprehensive review of the transactional model of development which guides the interrelationships between children and their environments. Further, an outline of the literature related to the transition into grade school, development of friendship in childhood, and how childhood friendship relates to prosocial behaviours and aggressive behaviours will be presented. Finally, an exploration of the empirical literature examining the link between these constructs and their impact on children's academic achievement will be considered.

Transactional Model of Development

The transactional model of development posits that development is a result of the combined interactions between individuals and their environmental contexts (Sameroff & MacKenzie, 2003). More specifically, child outcomes are a result of the bidirectional effects of children and their familial and social contexts. A wide array of research investigating influences in early development, shyness and social withdrawal, aggression, substance use problems, psychopathology, child maltreatment, and infant-caregiver attachment supports the bidirectional nature of development (Sameroff & Mackenzie). This model will be used to guide the proposed research, and supports the reciprocal relationships between children's friendships, social behaviours, and academic achievement.

Grade School Transition

The shift from 5 to 7 years is marked by changes in children's social and emotional development, as well as by changes in cognitive (Piaget, 1962; Piaget, 1965),

creative and imaginative (Vygotsky, 2004), language (Vygotsky, 1962), self-regulatory (Bronson, 2000), memory, reasoning, and metacognitive development (for a review, see Morrison, Griffith & Frazier, 1996).

Cognitive and social-emotional development are closely intertwined and undergo considerable shifts during primary school (Bronson, 2000). According to the stages of moral development, Piaget (1965) asserts that children between 6 and 8 years develop logical thinking which increases their understanding of fairness and justice. During this time, children also acquire advanced role-taking skills that allow them to differentiate their own mental states from others' mental states more clearly.

Although controversy exists over the development of prosocial behaviour, a meta-analysis of 125 studies conducted by Fabes and Eisenberg (1996; as cited in Eisenberg & Fabes, 1998) reveals that prosocial behaviour generally increases with age. Effect sizes for infant, preschool, childhood and adolescent age groups were calculated, and support the conclusion that children display higher levels of prosocial behaviour such as providing instrumental help to others, comforting others, and sharing/donating as they grow older. During early childhood, children also develop a refined understanding of others' cognitive processes and emotional states, and are better able to interpret other's emotional cues (Eisenberg & Fabes). Perspective taking and socio-cognitive skills such as theory of mind, emotion understanding and social-information processing develop during this time, and are related to prosocial behaviours (Eisenberg & Fabes) and social competence.

Many definitions of social competence exist in the literature and little consensus exists on how it should be measured, however it generally reflects the degree of

effectiveness in which one interacts with others (Rose-Krasnor, 1997). Two dimensions of social competence emerge from the literature. One dimension relates to the effectiveness of social interactions from the individual's perspective (e.g., successfully achieving one's own goals and feelings of efficacy in group interactions), and the other pertains to the effectiveness of interactions from the group perspective (e.g., fostering healthy relationships with others, contributing effectively and responsibly to society, and attaining an appropriate place in social groups; Rose-Krasnor). Both the individual and group dimensions relate to healthy development, and are important when considering the construct of social competence.

Theory of mind, which typically emerges between 4 and 5 years of age, refers to the understanding of others' mental states and includes perception recognition, knowledge, desires, intentions and emotions (Fabes, Gaertner & Popp, 2005). Theory of mind is helpful when explaining and predicting others' intentions and behaviours and may facilitate more competent social interactions with others (Resches & Pereira, 2007).

Understanding other's emotional states is also important to children's development of social competence. Between the preschool and early school years, children's knowledge and communication of emotional states progresses beyond simple labels and descriptions and they begin to explain the cause of emotions and seek explanations from others about emotional states (e.g., why is she sad?; Thompson & Lagattuta, 2005).

Finally, how children process information from their environments contributes to their social competence development (Fabes et al., 2005). The social information processing model developed by Crick and Dodge (1994) posits that children receive a

variety of input cues, and how they perceive these cues determines their behaviour. The six stages encompassed in this model include: (a) encoding of external and internal cues; (b) interpretation and mental representation of these cues; (c) clarification or selection of a goal; (d) response access or construction; (e) response decision; and (f) behavioural enactment. Social competence is highly related to the ability to gather information from the environment, interpret these cues accurately and respond to them appropriately. Although less is known about the development of social information-processing in preschool- to second-grade children, it is likely that social cognition becomes more strongly tied to behaviour with development. For example, a 12-year prospective study of 576 children reveals that patterns of social information-processing problems observed in kindergarten students is related to concurrent mother and teacher reports of externalizing behaviours (e.g., delinquent or aggressive behaviours). However, these social information-processing problems do not predict future externalizing behaviours until children are in grade 8 (Lansford, Malone, Dodge, Crozier, Pettit, & Bates, 2006). These findings suggest that social cognition develops early in childhood, and that the impact of social cognition on behaviour becomes stronger as children age.

In addition to these developmental changes, children are faced with an ecological change that includes transitioning from the home environment into the school environment. During this time, children form new relationships with peers and teachers, and have increased social and academic demands placed on them. The relationships that children form with peers and teachers may function as stressors, supports, or both, and can significantly impact children's adaptation to new environments and challenges (Ladd, 1996). Specifically, close relationships with teachers or peers may provide children with

skills that facilitate positive school adaptation. Children who demonstrate positive peer interactions and cooperative play during preschool are better liked by peers and are viewed by their teachers as being more involved with peers during kindergarten (Ladd & Price, 1987). Similarly, Hamre and Pianta (2005) reveal in a study of grade-one children that emotional support (e.g., teacher sensitivity and positive climate) in the classroom can moderate the risk of early school failure. Children considered to be at-risk for school failure based on demographic information and several functional problems (e.g., behavioural, attentional, academic and social) made greater academic gains in classrooms considered to be high in emotional support compared to children in less supportive classrooms (Hamre & Pianta).

Alternatively, relationships that have a negative impact on children, or an absence of relationships, can interfere with children's adaptation to the environment and have a negative influence on their school adjustment (Ladd, 1996). Research indicates that the continuity of children's relationships (both in school and neighbourhood settings) fosters school adjustment, and that children who engage in aggressive behaviours in the classroom are more likely to become disliked by their peers and develop unfavourable perceptions by their teachers (Ladd & Price, 1987). Taken together, these findings indicate that the transition into grade school represents numerous childhood changes, which highlights the importance of understanding early childhood relationships, behaviours and their impact on school adjustment.

Childhood Friendship

Friendship is defined as a mutual, dyadic relationship and is characterized by a willingness to share, cooperate and help through positive exchanges (Newcomb &

Bagwell, 1995). Friendships in childhood are marked by *reciprocities* (e.g., mutual regard; mutual behaviours, such as cooperation and effective conflict management; and equal benefits from the social exchanges by the participants), *liking* (the desire to spend more time with one another relative to others), and *affection* and *having fun* (Bukowski, Newcomb & Hartup, 1996).

Friendships encounter qualitative changes from preschool to the school-age period, and from the school-age period to adolescence. During the preschool period, friendships are characterized by shared activities and opportunities for play (Newcomb & Bagwell, 1996). Upon entering grade school, friendships become more strongly founded in reciprocity, equality and cooperation, and evolve into relationships based on intimacy, trust and commitment during adolescence (Newcomb & Bagwell; Hartup & Abecassis, 2002). Reciprocated friendship in childhood facilitates entry into peer groups, cooperative play, and prosocial behaviour more so than children who do not have friends (Sebanc, 1999; as cited in Hartup & Abecassis).

Central to friendships are highly affiliative behaviours, affect and close behaviours. Children who are friends are more similar in regard to their prosocial behaviour, antisocial behaviour, shyness-dependency, depression, sociometric status and academic achievement than children who are considered to be "neutral" peers (Hartup & Abecassis, 2002). Furthermore, Newcomb and Bagwell (1995) reveal that there are four broad categories that characterize friendships: positive engagement, relationship mutuality, task behaviour and conflict management. More specifically, friends are more likely than those without close ties to spend time together and engage in conversations related to relationship mutuality. Additionally, friends are more supportive and mutually

oriented than non-friends. With regard to task management, friends spend more time on-task and talking about the task at hand than non-friends. Lastly, although disagreement and conflict exist within friendships, friends are more likely than non-friends to resolve disagreements and less likely to risk future interactions with these friends.

Friendship and Academic Achievement

Early classroom peer relations are important antecedents for children's school adjustment. As children enter school, those who have prior friendships and make friendships throughout the year, are more likely to have higher school adjustment and higher academic achievement than children with fewer friendships (Ladd, 1990). These results parallel the findings of Wentzel et al. (2004) that reveal more positive social and academic adjustment at the end of middle school for students with a friend than for students without a friend. More specifically, students without reciprocated friendships report lower levels of prosocial behaviours, higher levels of emotional distress, and a lower GPA than students with reciprocated friendships.

In addition to academic adjustment, friends also have effects on academic motivation; specifically, discussion between friends promotes similarity between them, which in turn influences academic achievement motivation (Berndt, Laychak & Park, 1990). Taken together, these results provide support for the notion that friends are a key influence in the development of academic adjustment and motivation in young children.

Although friendship is generally thought to have a positive effect on children's development, conflict within friendships can lead to higher levels of maladjustment in school. Ladd, Kochenderfer and Coleman (1996) reveal that friendship conflict leads to

declining levels of school involvement, higher levels of loneliness, and lower levels of school liking throughout the school year.

Friendship and Social Behaviours

Prosocial behaviours. Prosocial behaviours are voluntary, intentional actions that create positive or beneficial outcomes for the recipient, regardless of the effect on the donor (Grusec, Davidov & Lundell, 2002), and may be reciprocally related to friendships.

Friendship facilitates social development as children have more opportunities to learn and employ competencies (e.g., loyalty and closeness) that are necessary for effective interpersonal interactions, and provide a base for future relationships (Newcomb & Bagwell, 1995). An investigation of second- and third-grade children's classroom social positions reveals that friendship is uniquely and positively related to prosocial skills such as leadership and positive affect (e.g., humour). Further, friendship is negatively related to aversive social styles such as teasing or bossing (Gest, Graham-Bermann & Hartup, 2001). Friendship support is also positively linked with prosocial behaviour in preschool children (Sebanc, 2003), which is consistent with the evidence of school-aged children. A review of the literature reveals that success in friendships are positively correlated with popularity, positive social reputations, self-esteem, social involvement and good psychosocial adjustment (Hartup & Abecassis, 2002).

Aggressive behaviours. A convergence of research in recent years has identified and defined the different forms of aggression. More specifically, physical or overt aggression refers to behaviours that are intended to harm others through physical damage or the threat of such damage (e.g., hitting, shoving, threatening to beat up a peer); (Grotpeter & Crick, 1996). Conversely, indirect or relational aggression refers to

behaviours that are intended to harm the relationships of peers, such as giving a peer the silent treatment, spreading malicious lies and rumours about a peer, rejection and social exclusion (Grotpeter & Crick).

Physical aggression has traditionally been more prominent in boys whereas relational aggression was more characteristic of girls (Crick & Grotpeter, 1995); however, mixed findings have been reported. In a study of third- to sixth-grade students, Crick and Grotpeter reveal that as a group, girls are significantly more relationally aggressive than boys, and are more likely than boys to be in a relationally aggressive group when extreme groups (aggressive and non-aggressive) are compared. This trend is similar for boys in that boys are more likely to be in a group characterized by physical aggression, as well as display higher levels of physically aggressive acts than girls. Equally, Henington, Hughes, Cavell and Thompson (1998) examined physical and relational aggression in 461 boys and 443 girls in grades 2 and 3 and revealed higher levels of physical and relational aggression in boys than in girls.

Both relational and physical aggression influence the nature of children's friendships. More specifically, children who are considered to have high levels of relational aggression are more likely to have friendships characterized by high levels of intimacy, exclusivity and jealousy within the friendship context itself (Grotpeter & Crick, 1996). Additionally, children who engage in high levels of physical aggression tend to use physically aggressive acts to harm those outside of the friendship context. As children who are physically aggressive consider these aggressive acts to be important (e.g., they would become upset if their friends did not join in on these acts) children who enter the

friendship may be at-risk for participating in physically aggressive acts against others, even if they are not characteristically aggressive themselves (Grotpeter & Crick).

In addition to having friendships characterized by higher levels of aggression than non-aggressive peers, children considered to be aggressive also have friendships that are not long-lasting and quick to dissolute (Ellis & Zarbatany, 2007; Parker & Seal, 1996). In a study of 605 pre- and early-adolescent students, Ellis and Zarbatany reveal that physically aggressive peers were able to form new friendships, however these relationships were quick to dissolve and were not able to be sustained on physically aggressive behavioural similarities alone. Furthermore, this effect is more prominent on the younger children's friendships (pre-adolescent) than the early adolescent's friendships, suggesting that the negative impact of physical aggression has a greater effect on younger children than older children. This finding is consistent with the finding of Cillessen and Mayeux (2004), who demonstrate that physical aggression is decreasingly predictive of perceived popularity over time, whereas relational aggression has an increased influence on relationships.

Although the relationships of aggressive children tend to be characterized by higher levels of antisocial behaviours and be less stable over time, their friendship formation appears to be comparable to their non-aggressive peers. In an investigation of the social networks of aggressive children in grades four and seven, Cairns, Cairns, Neckerman, Gest and Gariepy (1988) reveal that highly aggressive peers are generally members of peer clusters and have a network of friends. Although they may be more likely to be disliked by peers for antisocial behaviours (e.g., bullying, victimizing,

ridiculing, etc.), they are equally as likely as their non-aggressive peers to have reciprocal "best friends."

Social Behaviours and Academic Achievement

An aggregation of evidence supports the link between children's social behaviours and academic achievement (Caprara et al., 2000; Green, Forehand, Beck & Vosk, 1980; Malecki & Elliott, 2002; Wentzel, 1991, 1993). Wentzel and Caldwell (1997) demonstrate that teacher ratings of student's social skills are positively related to children's academic achievement, and students' problem behaviours are negatively related to academic achievement (Wentzel & Caldwell). Furthermore, this relationship appears to be mediated by prosocial behaviours (Wentzel & Caldwell). High levels of aggression are also associated with lower levels of cooperative classroom participation, school liking and achievement (Ladd & Burgess, 2001).

Although there appears to be a concurrent link between children's social behaviours and academic achievement, only prosocial behaviours tend to be predictive of later academic achievement. The findings of Wentzel (1993) reveal that prosocial and antisocial behaviour are shown to independently predict student's GPA with prosocial behaviour predicting greater academic success and antisocial behaviour leading to lower academic success. However, only prosocial behaviours were significant predictors of children's scores on standardized tests of achievement (Wentzel). Furthermore, a longitudinal study of third-grade students by Caprara et al. (2000) supports the relationship between children's social behaviours and academic achievement, and demonstrates that early prosocial behaviour is a significant predictor of children's academic achievement over a five year period. Although physical and verbal aggression

did have a concurrent negative relation with prosocial behaviour and academic achievement, this relationship was not predictive of academic achievement five years later. Similarly, Malecki and Elliott (2002) employed a longitudinal design of third- and fourth-grade students. The findings reveal that social skills and problem behaviours are related concurrently to academic achievement, and that only social skills remain a significant predictor of children's academic achievement over a six month span (Malecki & Elliott).

Consistent with the transactional model of development, Welsh, Parke, Widaman and O'Neil (2001) reveal a reciprocal relationship between social and academic competence. In their longitudinal study of first-, second-, and third-grade children, Welsh et al. demonstrate that academic competence consistently predicts higher levels of later academic competence, positive social competence, as well as lower levels of negative social competence from first to third grade. Further, positive social competence is a significant predictor of academic competence from second to third grade (Welsh et al.). The findings that academic competence predicts social competence and that positive social competence begins to predict academic competence during second grade lends support to the transactional model of development. Taken together, these findings emphasize the importance of promoting positive social behaviours in early grade school as they are shown to influence and be impacted by academic competence.

Friendship, Social Behaviours and Academic Achievement

A model of the study hypotheses (Appendix A) posits that children's social behaviours (prosocial and aggressive styles) and friendships have a reciprocal relationship with each other, as well as direct effects on children's academic

achievement. The notion that prosocial behaviours are associated with friendship and academic achievement is supported by the findings of Wentzel and Caldwell (1997). Specifically, Wentzel and Caldwell demonstrate that reciprocated friendships, peer acceptance and group membership predict academic achievement concurrently as well as longitudinally, and that this relationship may be mediated by children's prosocial behaviour. Similarly, Ladd, Buhs and Troop (2002) assert that children's interpersonal relations (including mutual friendships and peer group acceptance) mediates the relationship between behaviour in school and school adjustment, which includes school perception and scholastic performance.

Summary and Interpretation

Much of the research examining the interrelationship of friendship, social behaviours and academic achievement is conducted using children in upper elementary (e.g., Wentzel & Caldwell, 1997) or children entering kindergarten (e.g., Findlay, Girardi, & Coplan, 2006; Ladd, 1990; Perren & Alsaker, 2006; Vitaro, Brendgen, Larose, & Tremblay, 2005), however less is known about these relationships for children entering grade one. The primary purpose of this investigation is to examine the relationships between perceived sense of friendship, social behaviours and academic achievement on standardized literacy measures in students entering grade school outside of a large Western Canadian city.

Based on the present review of the literature, it was predicted that children's prosocial behaviours would have a positive correlation with their perceived sense of friendships, as well as with their achievement scores on the standardized test. It was hypothesized that children in grade one who were rated as being high in physical or

relational aggression by their teachers would have similar levels of perceived friendships as their peers who are not considered to be high in aggression, which is consistent with the findings of Cairns et al. (1988). Although children considered to demonstrate high levels of aggressive behaviours by their teachers are expected to have similar levels of perceived friendships as their peers considered to have low levels of aggressive behaviours, a negative correlation between children's aggressive behaviours and academic achievement is anticipated. Further, the strength and nature of the relationship between aggressive behaviours and perceived friendship will be explored. Another key objective of this study was to determine which of these variables (i.e., prosocial behaviour, physical aggression, relational aggression and perceived sense of friendship) are significant predictors of children's academic achievement.

Summary of Study Hypotheses and Questions

This study seeks to explore the relationship between physical and relational aggression, and how these constructs relate to perceived sense of friendship. Specifically, are teacher-rated social behaviours or children's perceived sense of friendship significant predictors of grade one children's academic achievement?

1. It is hypothesized that there will be a positive correlation between teacher-rated prosocial behaviours and children's perceived sense of friendship. Further, it is hypothesized that both of these variables will correlate positively with children's academic achievement.
2. A negative relationship between grade one children's aggressive behaviours and academic achievement is predicted.

3. Both friendship and prosocial behaviours are hypothesized to predict academic literacy achievement.

Significance of the Study

This study seeks to delineate the interrelationships between children's prosocial and aggressive behaviours as rated by teachers, perceived friendships and academic achievement in grade one children and has several implications for future research and practice. For example, many interventions exist to promote children's social competence and to deter aggressive behaviours; however there are few interventions that adopt a tripartite model (Ladd et al., 2002) which integrates intervention in three pivotal areas: social competencies (e.g., behavioural skills and social cognitive skills); social relationships (e.g., peer acceptance, friendships and teacher-child relationships); and school adjustment (e.g., academic achievement). The integration of these three pivotal areas may help children to adapt to the short-term demands of their school environment, as well as promote positive adjustment in the long-term. This study may reveal interrelationships between these three key areas in child development, which would emphasize the importance of developing, and evaluating tripartite models of social competence.

CHAPTER 3

Method

Sample

The data used in this study are taken from a larger data set designed to evaluate the Roots of Empathy program. The data set was comprised of 221 grade one children attending school outside of a large Western Canadian city.

Active consent was required for participation in the study (see Appendix B for ethical considerations). As a result, the principal investigator of the original study presented an outline of the research to the school principals and teachers, as well as to each of the classrooms. Teachers were provided with a letter outlining the purpose of the research study; the study procedures; a promise to maintain confidentiality and anonymity; and contact information, as well as a consent form (Appendix B1). Students were also provided with parental consent forms; a letter from the principal investigator outlining the purpose of the research study; the study procedures; a promise to maintain confidentiality and anonymity; and contact information (Appendix B2). A letter of support from the school principal also accompanied each parental consent form and letter (Appendix B3). Only children with written parental consent were included in the study. In addition to parental consent, student assent was received from the students at the time of data collection.

Two hundred and eighty children were eligible to participate, and parental consent was obtained for 221 children. Pre-test data collected during the winter of 2007 was used in the present study. The final sample was comprised of 221 children (109 boys and 112 girls) in grades 1. Students were drawn from 14 classrooms across 5 elementary schools.

Of the 14 participating classrooms, 6 of the classrooms were French immersion, 1 classroom was German immersion, and 7 classrooms were English speaking.

Measures

Demographics. Students' dates of birth were collected from school records. During the administration of the child questionnaire, research assistants collected each student's gender, race/ethnicity, and language other than English.

Friendship. A 7-item friendship measure (adapted by Ladd, 1996) was used to assess students' sense of perceived friendships (Appendix D). Students rated their answers using the following 3-point Likert-type scale: yes, sometimes or no. The Cronbach's alpha coefficient is commonly used to assess the internal consistency of a scale (Pallant, 2007). The Cronbach's alpha for this measure was found to be 0.36.

Child social behaviours. Children's behaviours were assessed via teachers' reports. Teachers rated children's social behaviour using the *Child Social Behavior Scale* (CSBS; NLSCY, 2002; Appendix D1). The CSBS is a scale for teachers to rate individual children's social behaviour with peers at school. The CSBS was derived from scales evaluating proactive and reactive aggression (Crick & Dodge, 1996; Dodge & Coie, 1987), relational aggression (NLSCY, 2002), physical aggression (NLSCY, 2002) and prosocial behaviour (NLSCY, 2002). The CSBS uses scale points which are labeled and defined as follows: 1 = doesn't apply ("child seldom displays the behaviour"); 2 = applies sometimes ("child occasionally displays the behaviour"); 3 = certainly applies ("child often displays the behaviour"). Previous research provides support for the reliability and validity of the CSBS (NLSCY, 2002), as well as for the subscales assessing physical, proactive, reactive, and relational aggression. For the present

investigation, only the prosocial, physical aggression and relational aggression subscales were used. The present investigation reveals the following Cronbach's alphas: α= 0.93 (Prosocial Behaviour), α= 0.84 (Physical Aggression), and α= .81 (Indirect Aggression).

Literacy achievement. A direct test of literacy skills was conducted using the Word Identification subscale of the *Woodcock Reading Mastery Test – Revised* (WRMT-R). This measure has been used extensively to assess academic skills in children of this age and has 106 items that ask children to read words that become progressively more difficult. This scale has been shown to have good content validity, concurrent validity and internal consistency (Sattler, 2001). The present investigation reveals a Cronbach's alpha of 0.97 for this measure.

Procedures

Child questionnaires were administered to students in a one-to-one format by trained research assistants in approximately 20 to 40 minutes. Trained research assistants read all instructions (Appendix C) and questionnaire items aloud to the students to control for reading difficulties.

CHAPTER 4

Results

Preliminary Analyses

Prior to analysis, teacher ratings of physical aggression, relational aggression and prosocial behaviour, sense of perceived friendship and literacy achievement scores were examined for missing data and found to be fit for analysis (e.g., less than 5%; Tabachnick & Fidell, 2007). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity for each of the dependent variables.

The distribution for the friendship measure was slightly negatively skewed (-0.60) and leptokurtic (1.31) indicating that the majority of participants considered themselves to have high levels of friendship. The distribution for the prosocial behaviour measure was slightly negatively skewed (-0.44) and platykurtic (-0.49) indicating that many children were considered by their teachers to display high levels of prosocial behaviours, with few children displaying low levels of prosocial behaviour. The distributions for the aggressive behaviours were positively skewed (physical aggression = 2.92, relational = 2.70) and leptokurtic (physical aggression = 8.66, relational aggression = 6.85) suggesting that few children in this sample demonstrated physically or relationally aggressive behaviours and the majority of children displayed low levels of aggression. Lastly, the distribution for Word Identification was found to be negatively skewed (-1.27) and leptokurtic (.72) suggesting that most children achieved relatively high scores on this subtest. These statistics are considered to be acceptable as the effect of skewness and kurtosis on analyses is reduced with large samples (more than 200 participants;

Tabachnick & Fidell 2007, p. 80). Means and standard deviations for the study variables are presented in Table 1.

Table 1

Descriptive Statistics for Demographic Variables

Variable	*N*	*M*	*SD*
Age	221	6.25	.396
Gender	221		
Male	109		
Female	112		

Independent t-tests were conducted to compare the Word Identification scores, friendship scores and prosocial behaviours for males and females to determine if there were any gender differences. In these cases, the results of the *t* tests are presented for equal variances. There were no significant gender differences in Word Identification (t (219) = -.79, p = .43) or friendship (t (219) = .06, p = .95), however there were significant gender differences for prosocial behaviour (t (219) = -4.67, $p < .01$) indicating that girls display more prosocial behaviours than boys. Levene's test for equality of variance was significant for relational aggression and physical aggression. Therefore, the results for these t-tests are presented for equal variances not assumed. Results of the independent t-tests reveal significant gender differences for relational aggression (t (214) = -2.53, p = .01) and physical aggression (t (216) = 2.42, p = .01). The means and standard deviations for males and females are presented in Table 2. These results indicate that girls engaged in relational aggression more often than boys, and that boys engaged in physically aggressive acts more often than girls.

Table 2

Means and Standard Deviations for Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables For Males and Females

Variable	Male		Female	
	M	SD	M	SD
Word Identification	70.29	27.34	73.20	27.36
Friendship	2.51	0.30	2.51	0.25
Prosocial Behaviour	2.12**	0.51	2.41**	0.42
Physical Aggression	1.14*	0.30	1.06*	0.16
Relational Aggression	1.06*	0.16	1.13*	0.28

Note. ** $p < 0.001$, * $p < 0.05$

Independent t-tests were conducted to compare the friendship scores, prosocial behaviours, and relationally aggressive behaviours for children whose language of instruction was English and for children whose language of instruction was other than English. In these cases, the results of the *t* tests are presented for equal variances. Results of the independent t-tests do not reveal significant language of instruction differences for friendship (t (219) = -.28, p = 0.78), prosocial behaviour (t (216) = 1.55, p =0 .12), or relational aggression (t (214) = -1.10, p =0 .27). Levene's test for equality of variance was significant for Word Identification and physical aggression. Therefore, the results for these t-tests are presented for equal variances not assumed. Significant language of instruction differences were found for Word Identification (t (219) = 3.90, $p < .001$), however no significant differences were observed for physical aggression (t (216) = -1.43, p = 0.16). These findings indicate that children whose language of instruction was English performed significantly better on the Word Identification subtest than children whose language of instruction was not English. Means and standard deviations for

English language of instruction and other language of instruction are presented in Table 3.

Table 3

Means and Standard Deviations for Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables as a Function of Language of Instruction

Variable	English Language of Instruction		Other Language of Instruction	
	M	SD	M	SD
Word Identification	79.33**	19.46	66.06**	30.87
Friendship	2.51	0.26	2.52	0.29
Prosocial Behaviour	2.36	0.46	2.22	0.50
Physical Aggression	1.07	0.20	1.12	0.27
Relational Aggression	1.08	0.20	1.11	0.25

Note. ** $p < 0.001$, * $p < 0.05$

Associations Between Social Behaviours and Literacy Achievement

Partial correlation was used to explore the relationships between perceived sense of friendship, prosocial behaviours, physical aggression, indirect aggression and academic achievement, while controlling for language of instruction and gender.

Partial correlations between teacher-rated prosocial behaviour, teacher-rated physical aggression, teacher-rated indirect aggression, perceived sense of friendship, and Word Identification percentile ranks, which were found to be significantly related are presented in Table 4. Negative correlations emerged between teacher-rated student prosocial and aggressive behaviours. This indicates that as prosocial behaviour increased, physical and indirect aggression decreased, and vice versa. Further, a significant positive correlation was found between children's prosocial behaviour and their perceived sense

of friendship, indicating that as their prosocial behaviour increased, their perceived sense of friendship also increased. Children's prosocial behaviour was also positively related to their percentile ranks on the Word Identification subtest of the WRMT-R, suggesting that children who displayed higher levels of prosocial behaviour had better literacy achievement.

No relationship was found between children's aggressive behaviours (including physical aggression and indirect aggression) and their perceived sense of friendship. Significant negative correlations emerged between aggressive behaviours and Word Identification percentile ranks indicating that children whose teachers reported high levels of aggression had lower academic achievement scores, and vice versa.

Lastly, a significant positive correlation was found between children's perceived sense of friendship and Word Identification percentile ranks. As children's sense of perceived friendship increased, so did their percentile ranks on the Word Identification subtest.

Table 4

Partial correlations between Teacher-rated Prosocial Behaviour, Teacher-rated Aggressive Behaviours, Friendship and Word Identification Variables

Variable	1	2	3	4	5
1. Prosocial Behaviour	-	-.36**	-.16*	.16*	.18*
2. Physical Aggression		-	.46**	-.08	-.15*
3. Indirect Aggression			-	-.02	-.23*
4. Friendship				-	.18*
5. Word Identification Percentile Rank					-

Note. ** $p < 0.001$, * $p < 0.05$

Predictors of Literacy Achievement

In order to further explore the roles of prosocial behaviours, aggressive behaviours and childhood perceived friendship in academic achievement, and to determine if these variables significantly contributed to the prediction of children's Word Identification scores, standard multiple regression was conducted. Language of instruction was entered at Step 1, explaining 6.0 % of the variance in academic achievement. Prosocial behaviours were entered at Step 2, which increased the variance to 9%, F (2, 213) = 10.67, p< .001. Results indicated that prosocial behaviour accounted for an additional 3.3% (R^2_Δ = 0.033) of the variance in academic achievement (F_Δ (1, 213) = 7.733, p = 0.006). Perceived sense of friendship was entered in Step 3 and increased the total variance explained by the model as a whole to 11.3%, F (3, 212) = 8.99, p< .001. Perceived sense of friendship accounted for an additional 2.2% (R^2_Δ = 0.022) of the variance in academic achievement (F_Δ (1, 212) = 5.226, p = 0.023). Relational aggression was added to the model in Step 4 and increased the total variance explained by the model as a whole to 14.9%, F (4, 211) = 9.23, p< .001. Relational aggression accounted for an additional 3.6% (R^2_Δ = 0.036) of the variance in academic achievement (F_Δ (1, 211) = 8.945, p = 0.003). In the final model, physical aggression was included and did not contribute to any unique variance (R^2_Δ < 0.001) in academic achievement scores (F_Δ (1, 210) = .001, p = 0.981). Results of these analyses are presented in Table 5.

Table 5

Summary of Standard Multiple Regression Analysis for Variables Predicting Word Identification Percentile Ranks

Criterion	Step	Predictors	*B*	*SE B*	β
Word Identification Percentile Ranks	1	Language of Instruction	-11.813	3.537	-.215**
	2	Prosocial Behaviours	7.856	3.939	.140*
	3	Friendship	14.824	6.416	.149*
	4	Indirect Aggression	-22.740	8.430	-.191*
	5	Physical Aggression	-.205	8.633	-.002

Note. ** $p = 0.001$, * $p < 0.05$

CHAPTER 5

Discussion

The primary objective of this study was to investigate the interrelationships of grade one children's prosocial behaviours, relationally aggressive behaviours, physically aggressive behaviours and academic achievement, as well as to determine which variables were significant predictors of children's academic achievement

As hypothesized, prosocial behaviour was significantly and positively correlated with children's perceived sense of friendship. Further, significant positive correlations were observed between prosocial behaviour and academic achievement, as well as between friendship and academic achievement. Both physical and relational aggression were significantly and negatively related to academic achievement. Although not a predominant objective of this study, results reveal that girls display higher levels of prosocial behaviours than boys. Additionally, girls engage in more relationally aggressive acts than boys, whereas boys engage in more physically aggressive acts than girls. This is consistent with previous research examining gender differences in physical and relational aggression (e.g., Crick & Grotpeter, 1995). These findings have important applications to classroom practice as children's school performance appears to be associated with factors not traditionally inherent in academic instruction, such as child social behaviours and peer relationships. Integrating programs that facilitate peer relationships and prosocial behaviours into the classroom curriculum may enhance the academic adjustment of students, and may buffer against difficulties with later social and academic adjustment.

The results of the study also reveal that prosocial behaviour, friendship and relational aggression are significant predictors of children's academic achievement when

controlling for language of instruction and gender. The finding that perceived sense of friendship predicts academic achievement is consistent with the findings of Ladd (1990) who suggests that early peer relationships and school adjustment are reciprocally related, and that friendship development throughout the school year is associated with greater gains in school performance. Since friends are more similar with respect to their prosocial behaviour, antisocial behaviour, shyness-dependency, depression, sociometric status and academic achievement than children who are considered to be "neutral" peers (Hartup & Abecassis, 2002), it is important to promote early childhood friendships that are high in positive engagement, relationship mutuality, task behaviour and conflict management.

Prior research reveals that prosocial behaviours and antisocial behaviours tend to be related concurrently to academic achievement, however only prosocial skills tend to be predictive of academic achievement over time (Caprara et al., 2000; Malecki & Elliott, 2002; Miles & Stipek, 2006; Welsh et al., 2001; Wentzel, 1993; Wentzel & Caldwell, 1997). In a longitudinal study of 140 low-income children in the first grade, Miles and Stipek reveal that children who had better social skills performed better on tests of literacy achievement than children with fewer social skills. Further, Miles and Stipek show that social skills are significant predictors of academic achievement, however academic achievement does not in turn predict social skills. The present finding that prosocial behaviour strongly predicts academic achievement is consistent with the findings of Miles and Stipek, and is further support for the emphasis on promoting prosocial skills as opposed to solely attempting to stave off aggressive behaviours.

Contrary to the findings of Caprara et al. (2000), the present investigation revealed that indirect aggression is a significant predictor of academic achievement with

high levels of indirect aggression predicting poorer scores on the Word Identification subtest. These findings are in line with the findings of Ladd and Burgess (2001) who demonstrate that children who exhibit high levels of confrontive aggression in kindergarten become significantly less well adjusted in terms of classroom participation, school liking and achievement compared to children with low levels of confrontive aggression. Although relational aggression was found to be a significant predictor of literacy achievement, it was not as strong of a predictor as children's prosocial behaviours or perceived sense of friendship. Since schools are considered to be important socializing contexts for children, this outcome underlines the importance of fostering prosocial skills and discouraging the development of aggressive behaviours within the school environment.

The predictive value of friendship and prosocial behaviour in children's academic achievement has numerous practical applications for clinical practice. Namely, several social-emotional competence promotion programs exist to promote children's prosocial behaviours in the school context such as: Roots of Empathy (Schonert-Reichl, Smith & Zaidman-Zait, in press), Second Step (e.g., Frey, Hirschstein & Guzzo, 2000), PATHS (e.g., Greenberg & Kusche, 1998), and the Peacemaker's Program (Shapiro, Burgoon, Welker & Clough, 2002). Children's development of psychosocial competence is shown to be more profound during the early elementary years than during middle elementary (Schultz & Selman, 2004). In addition, children undergo considerable changes with respect to their cognitive and social-emotional development during the early primary school years. For instance, children begin to acquire advanced logical thinking (which in turn increases their understanding of fairness and justice; Piaget,

1965), as well as perspective taking, theory of mind, emotion understanding and social-information processing (Eisenberg & Fabes, 1998). Based on what we understand about child development, the transition into grade school represents a critical period for children as they are developing the socio-cognitive and social-emotional precursors to prosocial behaviour and social competence. This critical time period combined with the present findings that early social behaviours and friendships play an important role in predicting children's academic achievement emphasizes the importance of developing and evaluating tripartite intervention programs. These interventions would target prosocial behaviours, early peer relationships and school achievement, and would have important implications for children's positive school adjustment. Educating teachers about the importance of early intervention in these key areas and incorporating tripartite models into the core curriculum may enable teachers to prevent delays or deficits from developing. Specifically, children who may be 'at-risk' for academic failure may benefit from these early interventions aimed at fostering prosocial behaviours, positive peer relationships and successful academic achievement.

In this examination, the analyses between physical aggression and friendship, as well as between relational aggression and friendship reveal that there is no relationship between these variables. This means that children who are considered to be high in physical and/or relational aggression are just as likely to have perceived friendships as children low in these aggressive behaviours. This is consistent with the results of Cairns et al. (1988) who show that aggressive children are just as likely as their non-aggressive peers to have reciprocal best friends.

Future Research and Practice

The finding that relational aggression predicts academic achievement has several implications for future research and practice. Physical aggression during the 5 to 7 year shift continuously decreases with a concurrent increase in verbal aggression (Coie & Dodge, 1998). Currently, little research exists examining the forms and developmental consequences of indirect aggression during the early childhood years; however it is likely that indirect aggression increases during early childhood as physical aggression decreases (Coie & Dodge, 1998; Underwood, 2002). Since indirect aggression is a significant predictor of poorer academic performance in grade one children, developing classroom-based, prevention programs that address indirect aggression is important. Further evidence for promoting positive peer relationships early in school comes from a recent longitudinal investigation of 398 children followed from ages 5 to 12. Ladd, Herald-Brown and Reiser (2008) investigated the relation between peer group rejection and classroom participation and reveal that peer rejection inhibits classroom participation, and that the effects of peer rejection accrue and persist over time. For children who were aggressive and rejected early in school (kindergarten to grade 3), chronic rejection was linked to a considerable deficit in classroom participation that was evident upon entering grade school and persisted throughout the primary grades. Children who were rejected later in school (grades 4 to 6) also illustrated low levels of classroom participation, however these levels were not as low as children who were rejected in early grade school (Ladd, Herald-Brown & Reiser). Although chronic peer rejection is shown to precede loneliness and friendlessness (Ladd & Troop-Gordon, 2003; Pedersen, Vitaro, Barker &

Borge, 2007), positive peer relations such as peer acceptance may be reverse these effects (Ladd, Herald-Brown & Reiser).

Future empirical research is necessary in order to determine whether or not indirect aggression increases during the early childhood years, whether it differs for boys and girls, and to further determine the impact on social and school adjustment.

Limitations

Several limitations to this study should be considered when interpreting the findings of the present study. One major limitation is the low Cronbach's alpha obtained for the Friendship Questionnaire ($\alpha = .36$). Although an investigation of the Roots of Empathy program in primary schools in Australia revealed a Cronbach's alpha of .69 for this measure (Kendall et al., 2006), future research should investigate the utility of this measure in Canadian primary school-aged children. The low Cronbach's alpha obtained for this measure in the present study may be explained by the various languages of instruction and on-going cognitive development of the participants. Additionally, since grade one children are still in the preoperational stage according to Piaget (1962), they have not yet developed abstract thinking. Thus, children in grade one may not fully understand the items that target the construct of friendship. The Friendship Questionnaire is also a limitation to this study as it measures perceived sense of friendship for each child, and may not accurately measure reciprocated friendships.

As the results of this study are correlational in nature, caution should be exercised in making conclusions related to directionality. Additionally, extraneous variables may have contributed to the results of this study.

A non-probability based sampling technique was employed for the larger study from which the participants of this study were a part of. Specifically, convenience sampling was used as opposed to random sampling to recruit participants for the larger study. As a result, the current sample may not be representative of the larger population and caution should be employed when extending these findings to other children.

Conclusion

Consistent with expectations, prosocial behaviour and friendship were positively related to academic achievement, while physical aggression and relational aggression were negatively related to academic achievement. Of interest, relational aggression revealed a stronger relationship to academic achievement than physical aggression. Prosocial behaviour, friendship and relational aggression were also significant predictors of academic achievement, with prosocial behaviours and friendship predicting higher literacy achievement scores and relational aggression predicting lower literacy achievement scores. When physical aggression was included in the multiple standard regression, it did not predict any unique variance. Exploratory analyses aimed at delineating the relationship between aggressive behaviours and friendship revealed that no relationship exists between these variables.

In conclusion, the findings of the present study reinforce the importance of promoting healthy peer relationships and prosocial behaviours prior to and during grade school. This study also emphasizes the need for development and evaluation of early intervention programs targeting social behaviours, relationships with others, and school adjustment, which are founded within a tripartite model. The ecological, socio-cognitive and social-emotional changes that children encounter upon entering grade school

represent a critical period. Incorporating tripartite models into the core curriculum during this vulnerable time may have important implications for children's later social, emotional, behavioural and academic success.

References

Arsenio, W., Cooperman, S., & Lover, A. (2000). Affective predictors of preschoolers' aggression and peer acceptance: Direct and indirect effects. *Developmental Psychology, 36*, 438-448.

Ary, D., & Razavieh, A. (2002). *Introduction to research in education* (6th ed.). Belmont, CA: Wadsworth. pp 260-262.

Berndt, T., Laychak, A., & Park, K. (1990). Friends' influence on adolescents' academic achievement motivation: An experimental study. Journal of Educational Psychology, 82, 664-670.

Bronson, M. (2000). *Self-regulation in early childhood: Nature and nurture*. New York: Guilford.

Buhs, E., & Ladd, G. (2001). Peer rejection as antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology, 37,* 550-560.

Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G.W. Ladd (Eds.), *Peer relationships in child development* (pp. 15–45). New York: Wiley.

Bukowski, W.M., Newcomb, A.F., & Hartup, W.W. (1996). Friendship and its significance in childhood and adolescence: Introduction and comment. In W.M. Bukowski, A.F. Newcomb & W.W. Hartup (Eds.), *Friendship and its significance in childhood and adolescence* (pp. 1-15). New York, NY: Cambridge.

Cairns, R., Cairns, B., Neckerman, H., Gest, S., & Gariepy, J.L. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental Psychology, 24*, 815-823.

Caprara, G., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. (2000). Prosocial foundations of children's academic achievement. *Psychological Science, 11*, 302-306.

Card, N., & Little, T. (2006). Proactive and reactive aggression in childhood and adolescence: A meta-analysis of differential relations with psychosocial adjustment. *International Journal of Behavioral Development, 30*, 466-480.

Cillessen, A., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*, 147-163.

Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In N. Eisenberg (Ed.), *Handbook of child psychology* (pp. 779 862). New York: Wiley.

Crick, N.R., & Dodge, K.A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74-101.

Crick, N.R., & Dodge, K.A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development, 67*, 993-1002.

Dodge, K.A., & Coie, J.D. (1987). Social information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology, 53*, 1146-1158.

Duncan, G., Dowsett, C., Claessens, A., Magnuson, K., Huston, A., Klebanov, P., et al. (2007). School readiness and later achievement. *Developmental Psychology, 43,* 1428-1446.

Eisenberg, N., & Fabes, R. (1998). Prosocial Development. In N. Eisenberg (Ed.), *Handbook of Child Psychology (5th ed.).* New York: John Wiley & Sons.

Eisenberg, N., Guthrie, I., Cumberland, A., Murphy, B., Shepard, S., Zhou, Q., & Carlo, G. (2002). Prosocial development in early adulthood: A longitudinal study. *Journal of Personality and Social Psychology, 82,* 993-1006.

Ellis, W., & Zarbatany, L. (2007). Exploring friendship formation and stability: The role of children's and friend's aggression and victimization. *Merrill-Palmer Quarterly, 53,* 79-104.

Fabes, Richard A., Gaertner, B., & Popp, T. (2005). Getting Along with Others: Social Competence in Early Childhood. In K. McCartney & D. Phillips (Eds.), *Blackwell Handbook of Early Childhood Development.* Blackwell Publishing, 2005. Blackwell Reference Online. Retrieved August 17, 2008 from http://www.blackwellreference.com.login.ezproxy.library.ualberta.ca/subscriber/tocnode?id=g9781405120739_chunk_g978140512073917

Findlay, L., Girardi, A., & Caplan, R. (2006). Links between empathy, social behaviour, and social understanding in early childhood. *Early Childhood Research Quarterly, 21,* 347-359.

Frey, K., Hirschstein, M. & Guzzo, B. (2001). *Second Step: Preventing aggression by promoting social competence.* Austin, TX: PRO-ED.

Gest, S., Graham-Bermann, S., & Hartup, W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. *Social Development, 10*, 23-40.

Green, K. D., Forehand, R., Beck, S. J., & Vosk, B. (1980). An assessment of the relationships among measures of children's social competence and children's academic achievement. *Child Development, 51*, 1149–1156.

Greenberg, M. T., & Kusche, C. A. (1998). Preventive intervention for school-aged deaf children: The PATHS curriculum. *Journal of Deaf Studies and Deaf Education, 3*, 49–63.

Grotpeter, J., & Crick, N. (1996). Relational aggression, overt aggression, and friendship. *Child Development, 67*, 2328-2338.

Hamre, B., & Pianta, R. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development, 76*, 949-967.

Hartup, W., & Abecassis, M. (2002). Friends and enemies. In P. K. Smith & C. Hart (Eds.), *Blackwell handbook of childhood social developmen*t (pp. 285-306). Malden, MA: Blackwell.

Henington, C., Hughes, J., Cavell, T., & Thompson, B. (1998). The role of relational aggression in identifying aggressive boys and girls. *Journal of School Psychology, 36*, 457-477.

Kendall, G., Schonert-Reichl, K., Smith, V., Jacoby, P., Austin, R., Stanley, F. et al. (1996). *The evaluation of "Roots of Empathy" in western Australian schools 2005*. Perth, Australia: Telethon Institute for Child Health Research.

Ladd, G. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom: Predictors of children's early school adjustment? Child *Development, 61,* 1081-1100.

Ladd, G. (1996). Shifting ecologies during the 5 to 7 year period: Predicting children's adjustment during the transition to grade school. In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 161-186). Chicago, IL: University of Chicago Press.

Ladd, G. Buhs, E., & Troop, W. (2002). Children's interpersonal skills and relationships in school settings: Adaptive significance and implications for school-based prevention and intervention programs. In P. K. Smith & C. Hart (Eds.), *Blackwell handbook of childhood social development* (pp. 394-415). Malden, MA: Blackwell.

Ladd, G., & Burgess, K. (2001). Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment? *Child Development, 72,* 1579-1601.

Ladd, G., Kochenderfer, B., & Coleman, C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development, 67,* 1103-1118.

Ladd, G., Kochenderfer, B., & Coleman, C. (1997). Classroom peer acceptance, friendship and victimization: Distinct relational systems that contribute uniquely to children's school adjustment? *Child Development, 68,* 1181-1197.

Ladd, G., & Price, J. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58,* 1168-1189.

Ladd, G., & Troop-Gordon, W. (2003). The role of chronic peer difficulties in the development of children's psychological adjustment problems. *Child Development, 74,* 1344-1367.

Lansford, J., Malone, P., Dodge, K., Crozier, J., Pettit, G., & Bates, J. (2006). A 12-year prospective study of patterns of social information processing problems and externalizing behaviours. *Journal of Abnormal Child Psychology, 34,* 715-724.

Malecki, C., & Elliott, S. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *School Psychology Quarterly, 17,* 1-23.

Miles, S., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behaviour and literacy achievement in a sample of low-income elementary school children. *Child Development, 77,* 103-117.

Morrison, F., Griffith, E., & Frazier, J. (1996). Schooling and the 5 to 7 shift: A natural experiment. In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 161-186). Chicago, IL: University of Chicago Press.

Newcomb, A., & Bagwell, C. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117,* 306-347.

Newcomb, A., & Bagwell, C. (1996). The developmental significance of children's friendship relations. In W.M. Bukowski, A.F. Newcomb & W.W. Hartup (Eds.), *Friendship and its significance in childhood and adolescence* (pp. 1-15). New York, NY: Cambridge.

NLSCY (2002). *The Well-Being of Canada's Young Children: Government of Canada Report.* (Available from Human Resources Development Canada and Health Canada).

Pallant, J. (2007). *SPSS survival manual: A step-by-step guide to data analysis using SPSS for windows (3rd ed.).* New York: Open University.

Parker, J., & Seal, J. (1996). Forming, losing, renewing and replacing friendships: Applying temporal parameters to the assessment of children's friendship experiences. *Child Development, 67,* 2248-2268.

Pedersen, S., Vitaro, F., Barker, E., & Borge, A. (2007). The timing of middle-childhood peer rejection and friendship: Linking early behavior to early-adolescent adjustment. *Child Development, 78,* 1037-1051.

Perren, S., & Alsaker, F. (2006). Social behaviour and peer relationships of victims, bully-victims, and bullies in kindergarten. *Journal of Child Psychology and Psychiatry, 47,* 45-57.

Piaget, J. (1962). The stages of intellectual development of the child. *Bulletin of the Menninger Clinic, 26,* 120-128.

Piaget, J. (1965). *The moral judgment of the child.* New York: Free Press.

Resches, M., & Pereira, M.P. (2007). Referential communication abilities and theory of mind development in preschool children. *Journal of Child Language, 34,* 21-52.

Rose-Krasnor, L. (1997). The nature of social competence: A theoretical review. *Social Development, 6,* 111-135.

Sameroff, A.J. & MacKenzie, M.J. (2003). Research strategies for capturing transactional models of development: The limits of the possible. *Development and Psychopathology, 15,* 619-700.

Sattler, J. (2001). *Assessment of children: Cognitive applications (4th ed.).* San Diego: Jerome M. Sattler.

Schonert-Reichl, K., Smith, V. & Zaidman-Zait, A. (in press). Effectiveness of the "Roots of Empathy" program in fostering children's social-emotional competence. *School Psychology Review.*

Schultz, L. & Selman, R. (2004). The development of psychosocial maturity in young children: A measure for evaluating character education programs. *Journal of Research in Character Education, 2,* 19-44.

Shapiro, J., Burgoon, J., Welker, C. & Clough, J. (2002). Evaluation of the peacemakers program: School-based violence prevention for students in grades four through eight. *Psychology in the Schools, 39,* 87-100.

Tabachnick, L., & Fidell, L. (2007). *Using multivariate statistics (5th ed.).* Boston: Pearson Education.

Thompson, R., & Lagattuta. K. (2005). Feeling and understanding: Early emotional development. In K. McCartney & D. Phillips (Eds.), *Blackwell Handbook of Early Childhood Development.* Blackwell Publishing, 2005. Blackwell Reference Online. Retrieved August 17, 2008 from http://www.blackwellreference.com.login.ezproxy.library.ualberta.ca/subscriber/tocnode?id=g9781405120739_chunk_g978140512073918

Underwood, M. (2002). Sticks and stones and social exclusion: Aggression among boys and girls. In P. K. Smith & C. Hart (Eds.), *Blackwell handbook of childhood social development* (pp. 394-415). Malden, MA: Blackwell.

Vitaro, F., Brendgen, M., Larose, S., & Tremblay, R. (2005). Kindergarten disruptive behaviours, protective factors, and educational achievement by early adulthood. *Journal of Educational Psychology, 97*, 617-629.

Vygotsky, L.S. (1962). Thought and word. In L. Vygotsky, E. Hanfmann & G. Vakar (Eds.), Thought and language (pp. 119-153). Cambridge, MA: MIT Press.

Vygotsky, L.S. (2004). Imagination and creativity in childhood. *Journal of Russian & East European Psychology, 42*, 7-97.

Welsh, M., Parke, R., Widaman, K., & O'Neil, R. (2001). Linkages between children's social and academic competence: A longitudinal analysis. *Journal of School Psychology, 39*, 463-481.

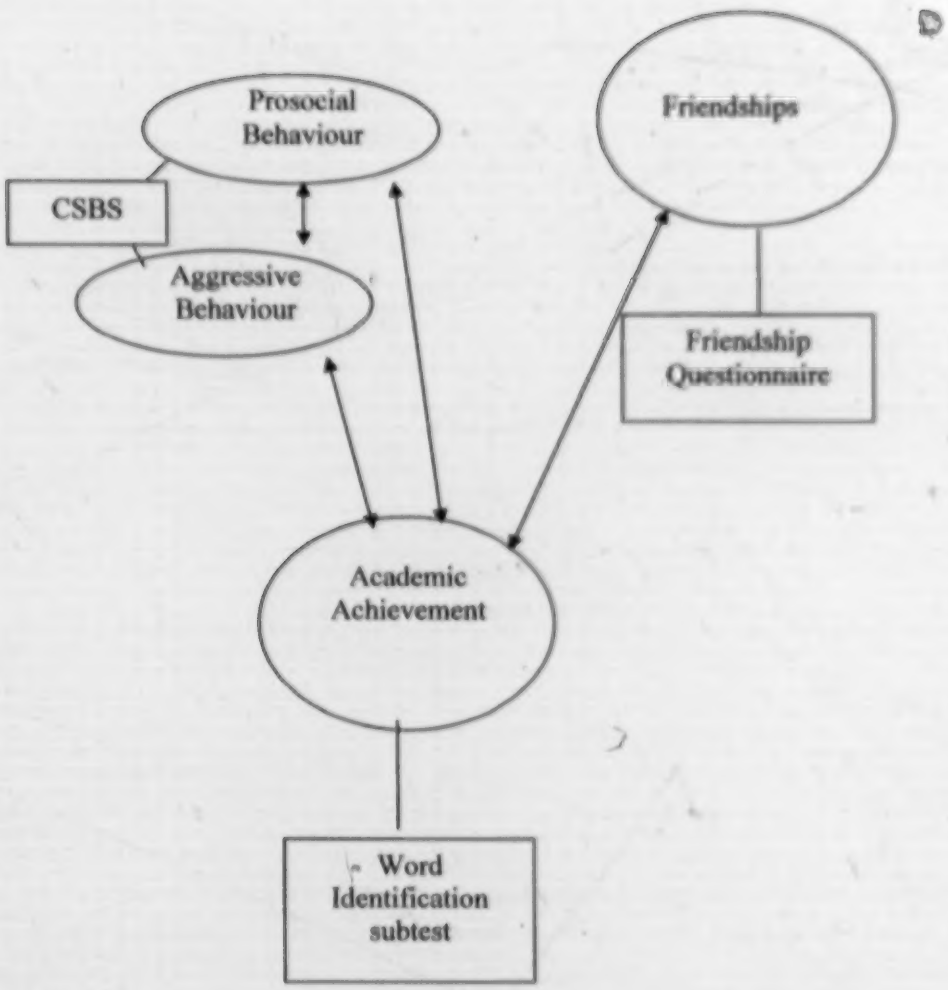
Wentzel, K. R. (1991). Relations between social competence and academic achievement in earlyadolescence. *Child Development, 62*, 1066–1078.

Wentzel, K. R. (1993). Does being good make the grade? Social behavior and academic competence in middle school. *Journal of Educational Psychology, 85*, 357–364.

Wentzel, K. R., Barry, C. M., & Caldwell, K. (2004). Friendships in middle school: Influences on motivation and school adjustment. *Journal of Educational Psychology, 96*, 195–203.

Wentzel, K., & Caldwell, K. (1997). Friendships, peer acceptance, and group membership: Relations to academic achievement in middle school. *Child Development, 68*, 1198-1209.

Appendix A


Prosocial Behaviour
CSBS
Aggressive Behaviour
Friendships
Friendship Questionnaire
Academic Achievement
Word Identification subtest

Appendix B

Ethical Considerations

Free and informed consent. Free and informed consent was ensured in this study by providing prospective teachers with letters of information and consent forms. In addition, information letters and consent forms were sent home to the parents of the potential participants. It was clearly stated in the letters that participation in this research is confidential, voluntary, and that they are free to end participation in the research at any point without explanation or penalty. Further, parents and teachers were provided with the contact information for the principal investigator, a school district contact, and the Chair of the EE REB at the University of Alberta. In addition to obtaining parental consent, children were asked for their assent before participating.

Privacy, confidentiality, and anonymity. Privacy, confidentiality, and anonymity was ensured by not identifying children, teachers or school administrators by name or place of residence in any published or presented manner. Further, children's names were replaced by numerical codes, which were used to refer to all children and other participants in the computer database. All of the original data records were coded and maintained in a locked filing cabinet at the University of Alberta. Lastly, data that was coded on the computer hard drive was maintained on a password protected hard drive at the University of Alberta in a locked office space.

Appendix B1

Department of Educational Psychology
Faculty of Education

6-102 Education North www.uofaweb.ualberta.ca/edpsychology Tel: 780.492.5245
Edmonton, Alberta, Canada T6G 2G5 Fax: 780.492.1318

Dear Teacher,

You and your students have been selected to be participants in a research project that I am conducting at your school entitled **"Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment."** Listed below are several aspects of the project that will enhance your understanding of the study.

Purpose: The purpose of this study is to examine the development of social and emotional behaviours in children and to understand the effectiveness of an educational intervention designed to promote social-emotional understanding and to reduce bullying in children. This study is the first of its kind of grade one children in Alberta and will provide important information on the role of social and emotional learning programs in children's development. Ultimately, this understanding will better equip educators to improve education for all.

Study Procedures:

1. **Student and Teacher Questionnaires:** Students who participate in this study will be asked to fill out a questionnaire at school, once during the next month and again at the end of the school year. The questionnaire will take approximately 15-20 minutes to complete and will be administered in a one to one administration by qualified research assistants from the University of Alberta. The questionnaire asks about students' understanding of friendship, emotional understanding, and asks them to provide information on their knowledge of babies and baby safety. Additionally, as we are interested in understanding how social and emotional development is linked to academic achievement, we will conduct some measures of early reading skill development at the beginning of the study and at the end of the school year. We are also interested in understanding the long-term impact of this program and are asking the parents to consent to allowing us to return at the end of grade 3 to conduct similar measures. In addition to obtaining information from children, classroom teachers will be asked to complete a brief checklist assessing various dimensions of student classroom behaviours.
2. **Academic Achievement:** As part of this study we are interested in understanding how teacher ratings of academic achievement are related to child social understanding and behaviours. Information relating to school achievement (i.e., grades) will be collected from students' school records.
3. **Background and Teaching Experience:** Participating teachers will be asked to complete a brief questionnaire regarding their education and background with social and emotional learning programs. The questionnaire will roughly take 10 minutes and will be completed at the beginning of the study and again at the end of the school year.

Confidentiality: Results from the observations and questionnaires will be summarized by research assistants at the University of Alberta. All of the child and teacher responses to the social and behavioural questionnaires will be completely confidential and will not be available to other teachers, other parents, or other school personnel. **No specific school, teacher, or child will be referred to by name or identified in any way in the report of the results. This child data will not be available to anyone else without written consent from the parents. Data collected from the teachers will not be available to anyone else without written consent from the teachers.** Scores from the literacy assessments will be made available to teachers as you may find this information useful to guide your teaching practice.

Contacts: If you have any questions, please do not hesitate to call me at (780) 492-7425 (veronica.smith@ualberta.ca). The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB (780-492-3751). [Xx in your] School Division has also reviewed this plan of study. If you have any questions or concerns about the study you can contact her locally at [xx].

Teachers will be compensated for their time with a $200 honorarium that will be paid in their name to the school budget if they choose to participate. Participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time, even after signing this consent form. Refusing to participate or withdrawal will not jeopardize your position in the school district in any way. Additionally, withdrawal from the study will not prohibit the payment of the honorarium if you originally chose to participate.

Thank you for considering participation in this aspect of the study and for completing the attached teacher consent form.

Sincerely,

Veronica Smith, Ph.D.

TEACHER CONSENT FORM

Study Title: "Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment."

Researchers: **Veronica Smith, Ph.D.**
Assistant Professor, Department of Educational Psychology, University of Alberta, 6-102 Education North, Edmonton, AB T6G 0A5
Phone: 780 492 –7325
veronica.smith@ualberta.ca

(KEEP THIS PORTION FOR YOUR RECORDS)

I have read and understand the attached letter regarding the study entitled **"Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment."** I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, I would like to participate in this study
_____ No, I do not wish to participate.

Signature_____

Name_____

Date_____

(DETACH HERE AND RETURN TO Dr. Veronica Smith)

I have read and understand the attached letter regarding the study entitled: **"Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment."** I have also kept copies of both the letter describing the study and this permission slip.
_____ Yes, I would like to participate in this study.
_____ No, I do not wish to participate

Signature_____

Name_____

Date_____

Appendix B2

Department of Educational Psychology
Faculty of Education

6-102 Education North www.uofaweb.ualberta.ca/edpsychology Tel: 780.492.5245
Edmonton, Alberta, Canada T6G 2G5 Fax: 780.492.1318

Dear Parent(s);

I am writing to request permission for your son/daughter to participate in an exciting research project that we are conducting at his/her school. Listed below are several aspects of this project that you need to know.

Purpose: The purpose of this study is to examine the development of social and emotional behaviours in children and to understand the effectiveness of an educational intervention designed to promote social and emotional understanding and to reduce bullying in children. It is hoped that the results of this study will help educators better understand children's social development and the effectiveness of an educational intervention designed to promote social and emotional competence.

Study Procedures: Students who participate in this study will be asked to fill out a questionnaire at school, once during the next month and again at the end of the school year. The questionnaire will take approximately 15 minutes to complete and will be administered in a one to one administration by qualified research assistants from the University of Alberta. The questionnaire asks about students' understanding of friendship, emotional understanding, and asks them to provide information on their knowledge of babies and baby safety. Additionally, as we are interested in understanding how social and emotional development is linked to academic achievement, we will conduct some measures of early reading skill development at the beginning of the study and at the end of the school year. We are also interested in understanding the long-term impact of this program and would like you to consent to allow us to return at the end of grade 3 to conduct similar measures.

In our project, we are not, in any sense "testing" the children. There are no right or wrong answers – we simply want to know how children understand themselves and their emotions and how these understandings link to their school success. We have found that children genuinely enjoy the questionnaires, and are eager and happy to participate in helping us better understand the social-emotional development of Canadian children. Some of the children who participate in the study have received a program in their classroom designed to promote empathy while other children in the study did not receive such a program. In addition to obtaining information from children, classroom teachers are being asked to complete a brief checklist assessing various dimensions of your child's classroom behaviours. Information relating to school achievement will be collected from students' school records.

Confidentiality: Results from the observations and questionnaires will be summarised by research assistants at the University of Alberta. All of the child and teacher responses to the social and behavioural questionnaires will be completely confidential and will not be available to other teachers, other parents, or other school personnel. **No specific school, teacher, or child will be referred to by name or identified in any way in the report of the results. This child data will not be available to anyone else without your written consent**. Scores from the literacy assessments will be made available to teachers as they may find this information useful to guide their teaching practice.

Contacts: If you have any questions, please do not hesitate to call me at (780) 492-7425 (veronica.smith@ualberta.ca). The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB (780-492-3751). Jerry Zimmer, Superintendent with the Greater St. Albert Catholic Schools has also reviewed this plan of study. If you have any questions or concerns about the study you can contact him locally at 459 7711.

Thank you for considering your child's participation in the study and for completing the attached consent form.

Sincerely,

Veronica Smith, Ph.D.

PARENT CONSENT FORM

Study Title: "Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment'"

Researchers: **Veronica Smith, Ph.D.**
Assistant Professor, Department of Educational Psychology, University of Alberta, 6-102 Education North, Edmonton, AB T6G 0A5
Phone: 780 492 –7325 veronica.smith@ualberta.ca

(KEEP THIS PORTION FOR YOUR RECORDS)

I have read and understand the attached letter regarding the study entitled "Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment." I have also kept copies of both the letter describing the study and this permission slip.

_____ Yes, I would like my child to participate in this study
_____ No, I do not wish my child to participate
Signature_____

Name_____

Date_____

(DETACH HERE AND RETURN TO classroom teacher)

I have read and understand the attached letter regarding the study entitled: "Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment." I have also kept copies of both the letter describing the study and this permission slip.
_____ Yes, I would like my child to participate in this study.
_____ No, I do not wish my child to participate

Your Child's Name: _____

Signature_____

Name_____

Date_____

Appendix B3

January 2007

Dear Parents/Guardians:

You will find attached a letter requesting permission for your son or daughter to take part in a very exciting research project at our school this year. This study will help us plan to meet the needs of all of our students.

We would like to get this project underway as quickly as possible so that we can use the information to plan programs in the near future. Please read the letter carefully as it explains the kinds of questions that will be asked and what will be done with the information. We would appreciate the return of the permission slip by tomorrow, if possible.

Thank you in advance for helping making our school an even better place to be for all of our students.

Yours Sincerely,

Principal

Appendix C

Roots of Empathy: Program Effects on Grade One Children's Social, Emotional, Academic and School Adjustment

Instructions for the Interviewer

NOTE TO INTERVIEWERS: PLEASE FOLLOW DIRECTIONS CAREFULLY. SEE the SENIOR RESEARCH ASSISTANT AND INQUIRE ABOUT ANY PROBLEMS OR ISSUES THAT COME UP DURING THE INTERVIEW. NOTE THESE ISSUES ON THE CHILD'S QUESTIONNAIRE.

You will need the following materials:

1. **Roots of Empathy Assessment Binder.**
2. **Packet of student questionnaires.**
3. **Stopwatch.**
4. **Pencils to thank children for participating.**
5. **Class list with all students' names. The SENIOR RA will take this list to the teacher and ask him/her the following two questions:**
    - **Are any of the students absent today? (if yes, tell the teacher someone will contact him/her to see about scheduling another time for make-ups).**
    - **Can you tell us why the following student did not participate? (for example, ESL, special education).**
6. **The SENIOR RA will have a packet for the teacher, which includes a teacher background questionnaire, and Child behaviour scales/emotion questionnaires for each student (include extras).**

Sequence of Events:

1. **Arrive 15 minutes early. ALL RAs must check in at the office – get a visitor's pass and sign in if necessary. The Senior RA will ask the principal or secretary where there is quiet place to work with the children. Often, the library or staff room is a good place.**
2. **The Senior RA will introduce you to the teacher – he/she will also give him/her the teacher packet (i.e., Child social behaviours and background questionnaires).**
3. **The Senior RA will ask the teacher for the permission slips and take a few moments to check through them. There must be one permission slip for each child who participates. The Senior RA will ask if there are any students who have returned their permission slips that you have not collected yet.** The Senior RA will ask if there are any children absent and note these on the DATA COLLECTION log. **Also, he/she will make arrangements with the teacher to come back to do a make-up questionnaire.**

4. **The Senior RA will ask if there are any students who need extra help (e.g. ESL).**
5. **The Senior RA will ask how the teacher in which order she would like students interviewed.**
6. **All students will have one-to-one interviews. Take student(s) to a your quiet work place to conduct the interview.**

Order of Questionnaires:

All students receive the following tasks:

1. Background Questionnaire
2. Animal Stories
3. Friendship Questionnaire
4. My Feelings Questionnaire
5. My School Questionnaire
6. Crying Baby
7. WRMT – Word Identification and Word Attack
8. Rapid Automatic Naming
9. CTOP - Elision
10. (**at posttest** only the ROE kids will receive the "Consumer Satisfaction Survey")

INTRODUCTION/DIRECTIONS TO STUDENTS (use this as a guide, you may paraphrase)

"Thank you for participating in this project (or helping us do our work). Because it has been a long time since we were children, we need to come to you so that we can learn about how children your age think and feel about things. This is called a research study – a study helps us learn more about how children in grade __ think and feel about things. In this study, we are going to be showing you some cartoons/stories and play some story-telling games. Before we begin, we want you to know a couple of things. First, this is not a test, there are no right or wrong answers, we just want to know what YOU THINK. Second, all of your answers are going to be private/confidential and third, you do not have to answer anything you do not want to. Do you have any questions? Okay, let's begin."

1. **Background Questionnaire/Child's Cover sheet:** ***Interviewer writes responses on the questionnaire***
   Try to get as much information as possible from each child; ask the teacher for any other information the child cannot answer. Ask the child to write his/her name (with last name initial), grade and teacher on the student cover sheet (with the apple).
   ** Write down any problem/concerns that come up during the interview on the child's background questionnaire in the comment space provided.

2. **Animal Stories:** ***Child writes responses on the questionnaire***

Follow the instructions provided. Let each child circle his/her answer. Make sure children understand the circle what they think is the BEST answer (i.e. NOT their favourite animal!)

3. **Friendship Questionnaire:** ***Interviewer writes responses on the questionnaire***
Read each question aloud. Ask each child to answer 'yes' if it is always like them; 'sometimes' if it is sometimes likes them; or 'no' if is never like them. Circle the child's answer.

4. **My Feelings Questionnaire:** ***Interviewer writes responses on the questionnaire***
Read each question aloud. Ask each child to answer verbally (yes, that's like me, or no, that's not like me). Then circle yes/no accordingly for each statement. Then, based on their answer, ask them, is that a 'big yes/no' so it is really like you/not like you a lot or is it a 'small yes/no' so it is kinda like you/not like you?

5. **My School Questionnaire:** ***Interviewer writes responses into questionnaire***
Read each question aloud. Ask each child to answer verbally (yes, that's like me, or no, that's not like me). Then circle yes/no accordingly for each statement. Then, based on their answer, ask them, is that a 'big yes/no' so it is really like you/not like you a lot or is it a 'small yes/no' so it is kinda like you/not like you?

6. **Crying Baby:** ***Interviewer writes responses into questionnaire***
Show each child the picture of the baby and write down each child's responses to the questions verbatim. If you are working with more than one child, have one child colour the colouring sheet (school bus picture), while you work with the other child. Then reverse, and work with the next child, until each child has answered the questions. If possible, try to minimize children overhearing another child's answers (try to separate kids).

7. **WRMT – R:** ***Interviewer writes responses into questionnaire***

a) **Word Identification Instructions:** Ask the student, "What is this word?" Always start with item one. Only allow the student 5 seconds with each word.
Scoring: If the student pronounces the word correctly (barring any obvious developmental misarticulations), mark the word as correct (4). Transcribe incorrect responses as best you can.
Ceiling: Continue until the student has six consecutive incorrect responses.

b) **WRMT Word Attack:** Instructions: Say, "I want you to read some words that are not real words. I want you to tell me how they sound." Point to the first word, 'tat', and say, "How does that word sound?" Continue with next word, say, "How does that word sound?"
Scoring: If the student pronounces the word correctly (barring any obvious developmental misarticulations), mark the word as correct (4). Transcribe incorrect responses as best you can.
Ceiling: Continue until the student has six consecutive incorrect responses.

8. **Rapid Automatic Naming:** ***Interviewer writes responses into questionnaire***

Equipment needed: stopwatch

a) RAN Colours: Place the unopened RAN: Colours stimulus card in front of the student and say, "Now, tell me the name of these colours." Point in random order to the five colours on the front of the card. Next say, No let's practice! Name these colours as quickly as you can without making any mistakes. The only time the student is corrected for the incorrect name (e.g., purple for blue or 'orange' for red) is during the instructions. Open the stimulus card and say, "Now you are ready to name all the colours on this card. Remember, start here (point to the first item) and name all the colours on each whole row as quickly as you can when I say go (point to the first item, scan your finger along the top row, move your finger to the first item on the second row and scan your finger along that row). "Ready, set, go!" Begin timing with a stopwatch after saying go. Circle any incorrectly identified stimuli. Write the students response above the stimulus. If the examinee self-corrects, write "sc" above the item. Stop the timer when the examinee says the last stimulus name. Record time, number of errors, and self-corrections in the boxes provides. Self-corrections are not counted as errors.

b) RAN Letters: Repeat the same procedures for the letter subtest.

9. CTOP – Elision ***Interviewer writes responses into questionnaire***
Instructions: First, complete the practice items. Say, "Let's play a word game." Complete a, b, and c. Give correct and incorrect feedback only for the practice items. Complete items # 1 -3. Then, say, " Okay, now let's try some where we take away smaller parts of the words." Provide correct and incorrect feedback for items d, e, and f. Then, continue with the test giving no feedback.
Scoring: Record correct answers as 1 and incorrect answers as 0. A total raw score for this subtest is the total test items from #1 – 20 up to the ceiling.
Ceiling: Stop after student misses 3 ***test items*** in a row (remember, ***test items NOT practice items***).

10. Consumer Satisfaction Survey: ***Interviewer writes responses into questionnaire***
Only for ROE classrooms at postest. Read each question and record child's answers

THANK STUDENT FOR PARTICIPATING (use this as a guide)

> ***"Thank you completing all those questions. You did a great job!" Give the child the pencil as his "research souvenir" and escort him/her back to his/her classroom.***

Check over the questionnaire to make sure that you have recorded all of the questions correctly. If you have forgotten any questions please return and ask the teacher if you can work with the child to finish up the

questionnaire. **Do not leave the school with any questions incomplete!!!**

If you have any questions regarding the administration of the questionnaire, please address them to the Senior Research Assistant who has accompanied you to the school.

Thanks!

Veronica Smith
Principal Investigator
University of Alberta
Ph. 780 492 7425 (office)
Cell 780 993 1322

Appendix D

Friendship Questionnaire

For the following saying, think of yourself and people your age when you answer. For each sentence, circle the word that describes HOW TRUE it is for you.
Answer honestly. Thank you.

	No	Sometimes	Yes
1. I have friends in my class that play with me.	No	Sometimes	Yes
2. My friends help me.	No	Sometimes	Yes
3. My friends and I like the same things.	No	Sometimes	Yes
4. Other kids my age want to be with me.	No	Sometimes	Yes
5. I have a best friend I can tell everything to.	No	Sometimes	Yes
6. When I want to play a game, I can find friends to play with me.	No	Sometimes	Yes
7. I have a best friend.	No	Sometimes	Yes

Appendix D1

Student's Name or ID#: **Date:**

School: **Teacher:**

Child Social Behaviour Scale

Please consider the descriptions contained in each of the following items below and rate the extent to which each of these descriptions applies to **this child**, particularly in the context of his/her behaviour with peers. Using the answers "**never or not true**," "**sometimes or somewhat true**" and "**often or very true**," how often would you say that **this child . . .** (Mark the circle corresponding to your answer, mark only one response per item.)

	Never or Not true	Sometimes or Somewhat true	Often or Very true
1. Shows sympathy to someone who has made a mistake.	○	○	○
2. Will try to help someone who has been hurt.	○	○	○
3. Gets into many fights.	○	○	○
4. Threatens or bullies other children to get his/her own way.	○	○	○
5. Volunteers to help someone clear up a mess that someone else has made.	○	○	○
6. When mad at someone, tries to get others to dislike that person.	○	○	○
7. Destroys things belonging to his/her family, or other children.	○	○	○
8. When teased or threatened, he/ she gets angry easily and strikes back.	○	○	○
9. If there is a quarrel or a dispute, will try to stop it.	○	○	○
10. When mad at someone, becomes friends with another as revenge.	○	○	○
11. Offers to help other children (friend, brother or sister) who are having difficulty with a task.	○	○	○
12. Claims that other children are to blame in fight and feels like they started the trouble.	○	○	○
13. When another child accidentally hurts him/her (such as by bumping into him/her), assumes that the other child meant to do it, and reacts with anger and fighting	○	○	○
14. When mad at someone, says bad things behind the other's back.	○	○	○
15. Comforts a child (friend, brother or sister) who is crying or upset.	○	○	○
16. Plays mean tricks.	○	○	○
17. Threatens people.	○	○	○
18. Spontaneously helps to pick up objects which another child has dropped (e.g., pencil, book).	○	○	○

19. Is cruel, bullies, or is mean to others.	❍	❍	❍
20. Uses physical force, or threatens to use force, to dominate other children.	❍	❍	❍
21. When mad at someone, says to others, "Let's not be with him/her."	❍	❍	❍
22. Kicks, bites, hits other children.	❍	❍	❍
23. Plans aggressive acts.	❍	❍	❍
24. Helps other children (friend, brother or sister) who are feeling sick.	❍	❍	❍
25. Will invite bystanders to join in a game.	❍	❍	❍
26. Careful to protect self when aggressive.	❍	❍	❍
27. Gets other children to gang up on a peer that he/she does not like.	❍	❍	❍
28. When mad at someone, tells the other one's secrets to a third person.	❍	❍	❍
29. Picks on smaller kids.	❍	❍	❍
30. Has hurt others to win a game.	❍	❍	❍
31. Hides aggressive acts.	❍	❍	❍
32. Takes the opportunity to praise the work of less able children.	❍	❍	❍
33. Can control own behaviour when aggressive.	❍	❍	❍